Exercise 2.12

Balancing Ecological, Social, and Economic Concerns

This exercise asks workshop participants to evaluate the social, ecological, economic, and ethical tradeoffs of conventional versus small scale harvesting technologies. It is meant to provoke some discussion of ethics and professional responsibilities when obligations to social, ecological, and economic standards conflict. It also should force serious discussion of the feasibility of actively managing interface forests in your region.

Objectives: Participants will be able to do the following:

1. Recognize that there are social, ecological, economic, and ethical tradeoffs when considering whether or not to recommend conventional versus small scale harvesting systems.
2. Negotiate ethical and professional responsibilities when social, ecological, and economic standards conflict.
3. Explain the feasibility of actively managing interface forests.

Materials:

Fact Sheet 2.9: Mechanical Vegetative Management
Handout 1: Small Scale and Conventional Harvesting Systems
Presentation 2.3
Paper and pen for the participants
Flip charts or chalkboard

Time: 20-30 minutes (10-15 minutes for small groups, 15-20 minutes for large group discussion)

1. Introduce the idea that interface natural resource professionals can be placed in the difficult position of recommending small scale harvesting that could result in negative consequences to the land and the workers. These harvesting techniques could also provide benefits to the forest and landowner. It is important for resource professionals to recognize and negotiate the important benefits and costs of alternative harvesting systems. This exercise enables them to have that discussion.

2. Divide the group into smaller groups of three or four. Distribute *Handout 1: Small Scale and Conventional Harvesting Systems* and ***Fact Sheet 2.9: Mechanical Vegetative Management*** pointing out that the fact sheet has relevant information. Display the exercise instructions in ***Presentation 2.3***. Ask each group to discuss, correct, and add to the list of advantages and disadvantages while they prepare to defend one of the two positions: small scale systems or conventional systems.

3. Reassemble the group and facilitate a discussion around the following questions:

   - What points in the table do you most disagree with? Why?
   - What key benefits and costs are missing from the table?
   - What are the key ethical, environmental, and economic trade offs in selecting a harvesting method?
   - Are there strategies or regulations that could be applied to either system to mitigate the risks? What might be feasible in your region?
   - Are there cases where resource managers would be doing a public disservice by recommending either system and promoting interface forestry?

Summary

The challenges in the wildland-urban interface to resource professionals and forest landowners make it difficult in some cases to recommend one harvesting system over another. This discussion should help participants recognize the circumstances in which one system might be favored, how to apply constraints to reduce the risk of negative consequences, and how to set up realistic expectations for landowners.

Handout 1: Small Scale and Conventional Harvesting Systems

Impact	Small Scale Systems	Conventional Systems
Soil Compaction	• Multiple passes over soil required, but smaller volume moved • Smaller tires can increase pressure per square inch	• Fewer passes over soil to move same volume • Larger tires and tracks • Much heavier equipment
Multiple Entries	• Select tree harvesting requires re-opening roads and entering stands with equipment more frequently, which could increase total erosion	• Clearcuts done less frequently. • The major sources of erosion (roads, landings, skid trails) could be kept vegetated
Residual Damage	• Skidding fewer logs per trip requires more trips and more chances to damage bumper and keeper trees, unless few logs are moved • Smaller equipment easier to maneuver and can avoid the remaining trees	• Larger equipment more difficult to maneuver • Higher percentage of trees are removed so fewer are left to sustain possible damage
Forest Health	• Opportunity to grow some very large and old trees by selecting others to harvest • Higher risk of introducing invasive species due to multiple entries	• Higher risk of introducing invasive species because of greater disruption • Easier to control insect and fire by removing greater percentage of vegetation
Wildlife	• Less variety of wildlife habitat, especially for species dependant on early successional forest ecosystems, unless stands are managed for different goals across the forest	• Much less variety of wildlife habitat, especially for species dependent on late successional forest ecosystems and forest biodiversity • Favors only early successional species
Productivity and Profit	• More gallons of fuel used per ton of timber extracted • More time per ton extracted	• Large capital expense for equipment requires high value, high volume harvest
Social Acceptance	• Less dramatic changes in the landscape • Continuous recreational benefits, such as open hiking or biking trails	• Larger equipment implies big business and raises concerns about whether landowner interests will be respected

Impact	Small Scale Systems	Conventional Systems
Social Acceptance	• Operations occur often • Keep hiking trails open • Less noise during operations	• Larger clearings and greater percentage of vegetation is removed or disturbed and are more noticeable • Operations occur less often
Worker Safety	• Increased safety risk for the harvesting crew due to being on the ground or in unprotected equipment	• Workers safely enclosed in equipment with protective ROPS and FLOPS
Worker Availability	• Limited pool of equipment and trained operators • Falls between the cracks of lawn and garden, arborists, and logging contractors	• Few large equipment contractors working in interface
Other		